



TRICARE Data Quality Training Course

May 2009

TRICARE Management Activity (TMA)
Defense Health Services Systems
United States Department of Defense Military Health System



DHSS Supports Enterprise-Wide Data Quality Efforts



Objectives

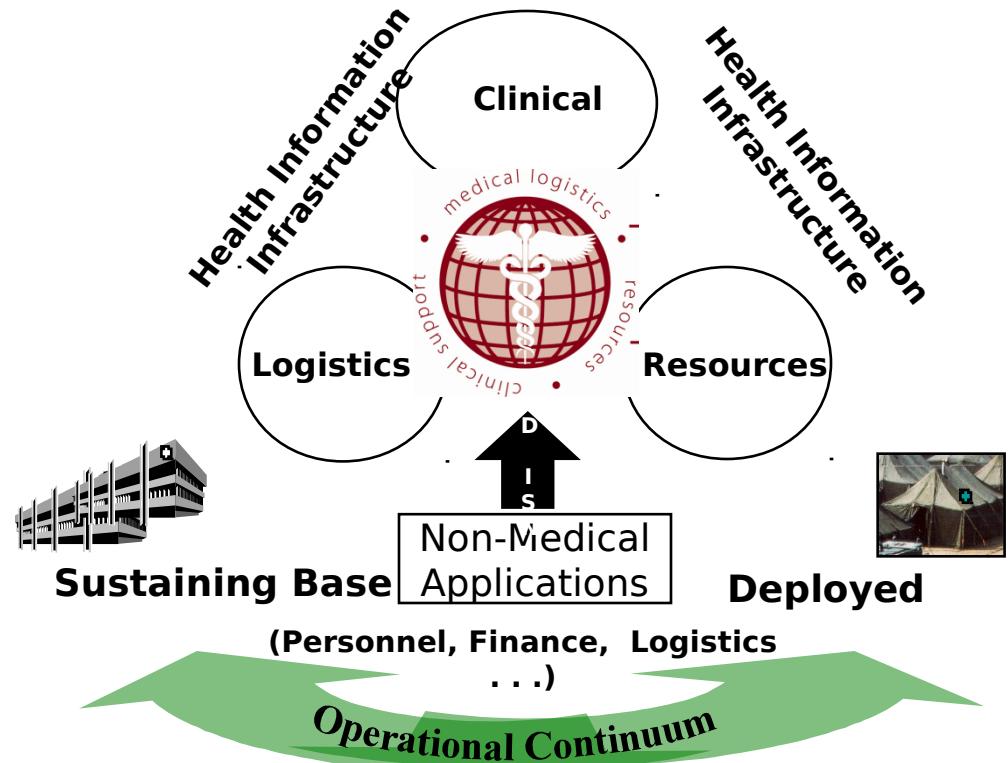
- Why data quality matters
- How our tools affect data quality
- How you can use this information in your data quality program

DHSS

- MHS centralized data store
- Receive, analyze, process, and store 100+ terabytes of data
- Thousands of users worldwide

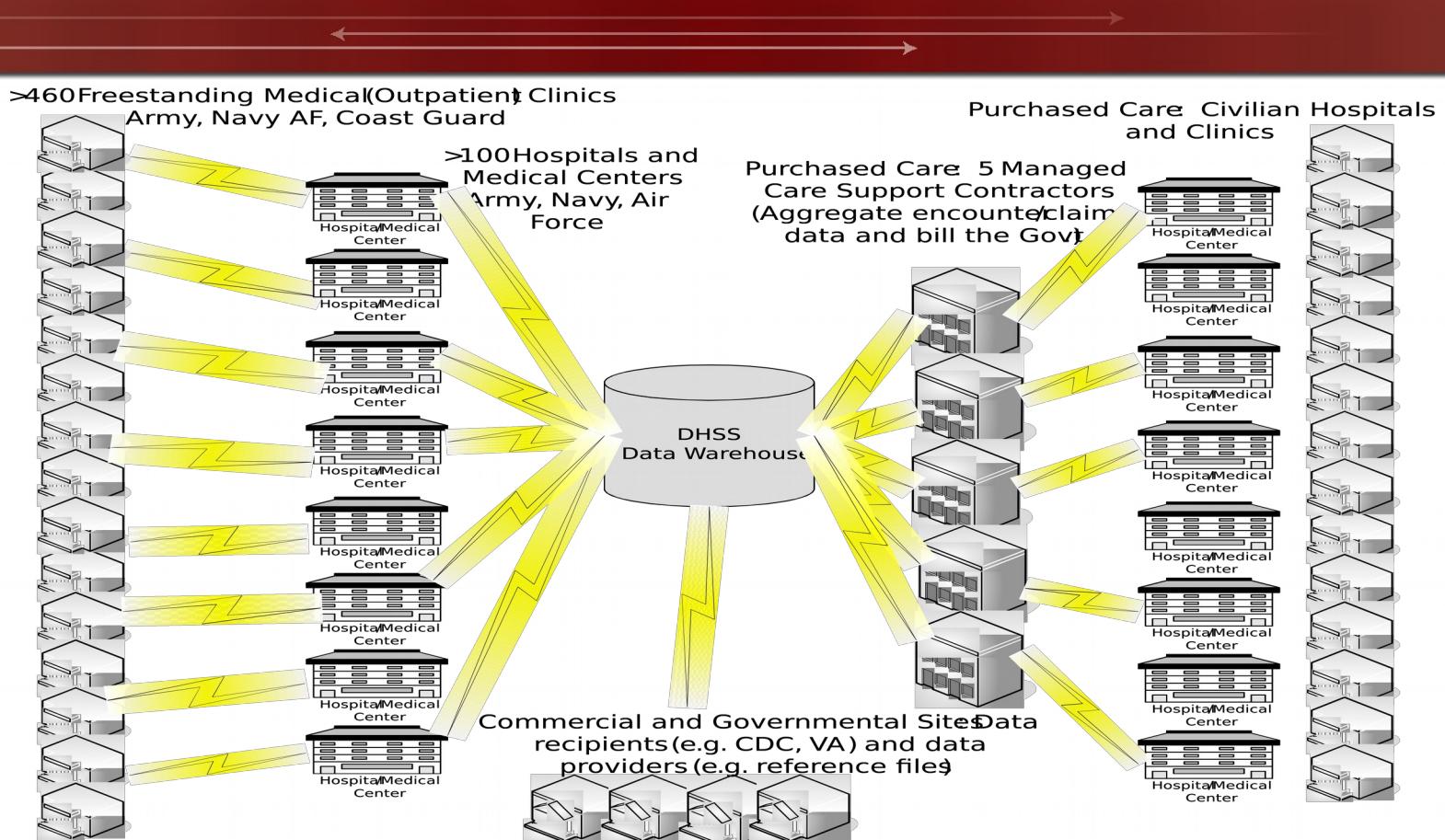
What is DHSS? 40,000 Foot View

- TRICARE decision support that makes the vision of the Military Health System Plan possible
- Military Health System technology that integrates and standardizes clinical, resource, population, logistics, and other referential information



What is DHSS?

20,000 Foot View



> 12 Million Beneficiaries

Direct (Military Provided) Care:	Inpatient: 250,000 Annually Outpatient: 30 Million Annually
Purchased (Civilian Provided) Care	Inpatient Claims: 800,000 Annually Outpatient "Claims": 100 Million Annually

DHSS - The Healthcare Data Warehouse

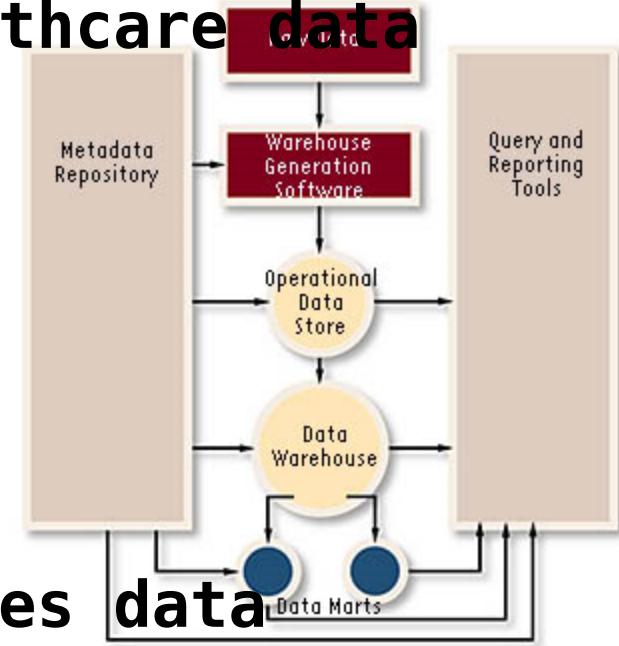
5,000 Foot View

- A wide variety of healthcare data

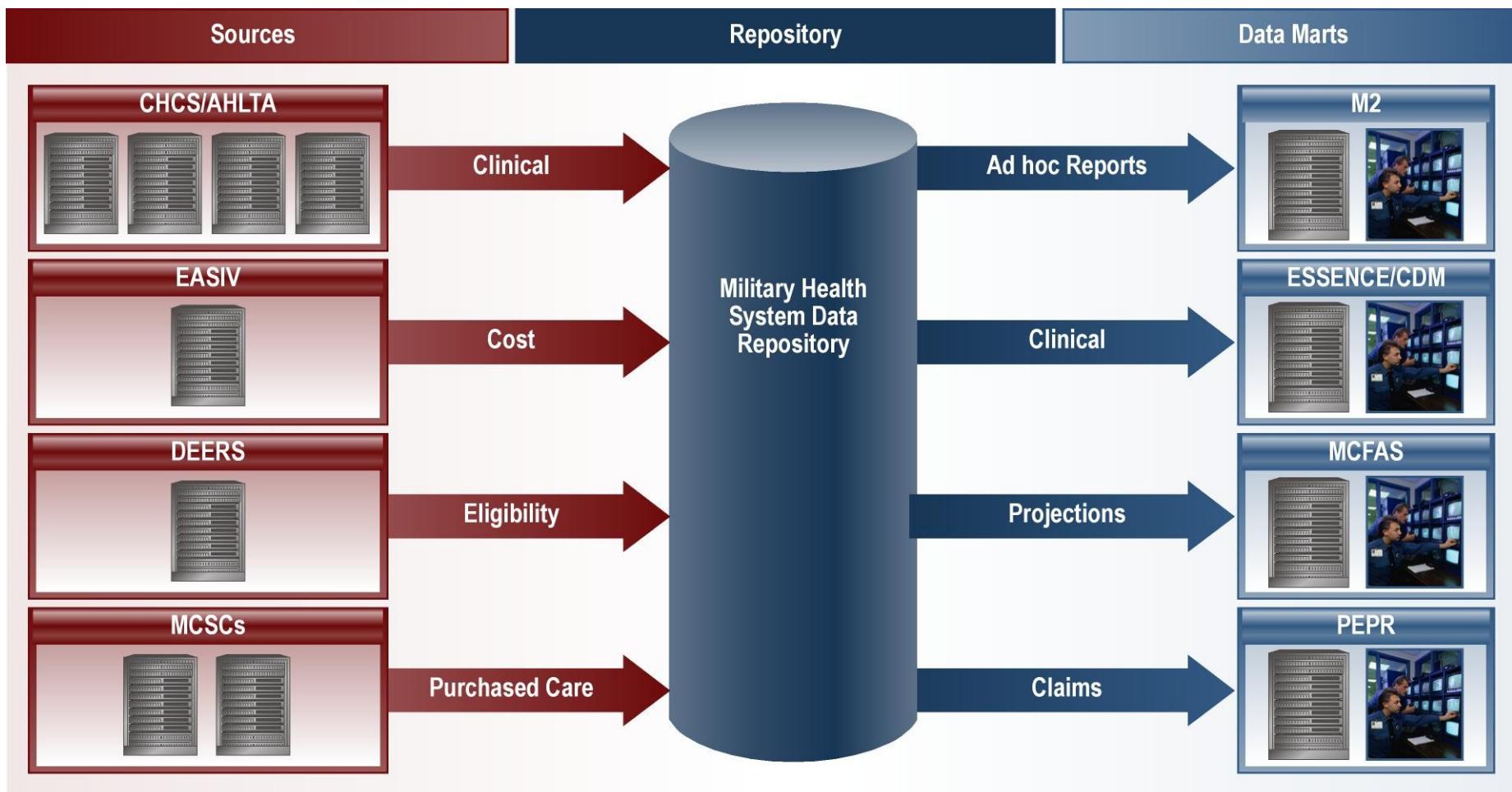
- > Rx, Lab, Rad, etc
- > Inpatient Episodes
- > Outpatient Encounters
- > Survey Data
- > Enrollment Data
- > Reference Data
- > Claims Data

- Collects and distributes data

- > Daily, weekly, and monthly
- > From over 460 freestanding clinics and 100 hospitals
- > From thousands of civilian facilities
- > Worldwide geographic distribution



DHSS Architecture 1,000 Foot View



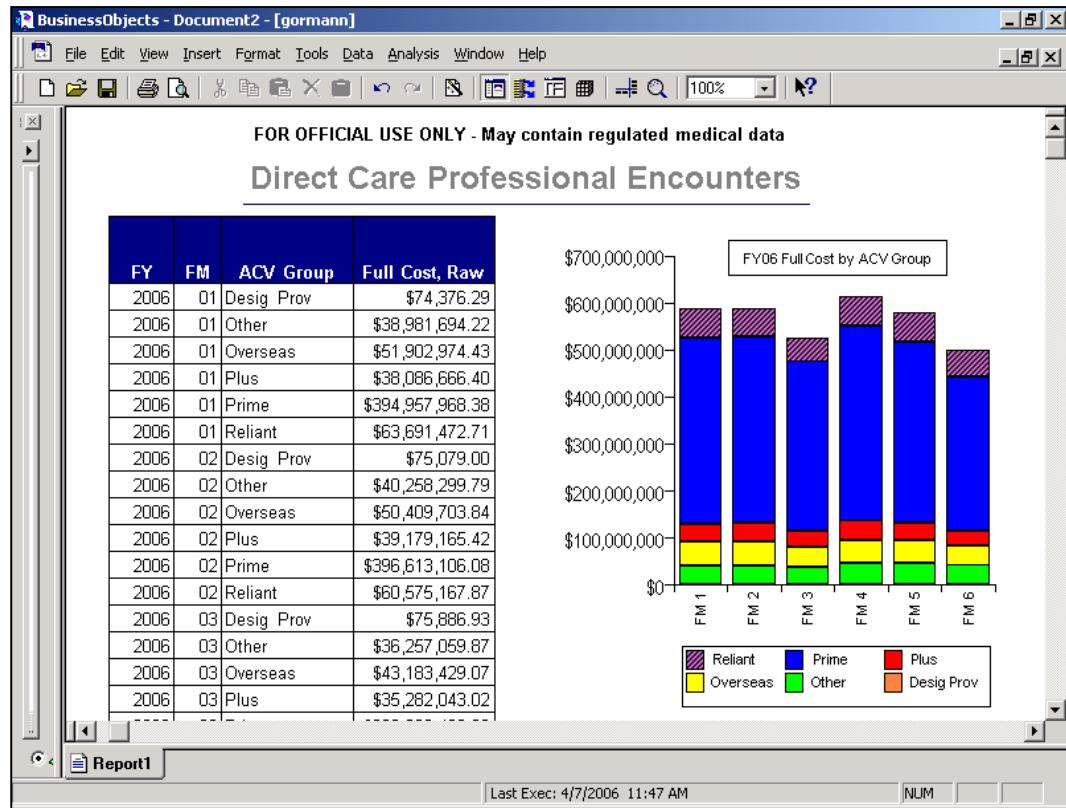
MDR (MHS Data Repository)

- Centralized data capture and validation of MHS data worldwide
- More than 5 billion records on-line with 10+ years of data
- Provides repository for other systems/applications to receive extracts
- Typical users: small cadre of high-level data analysts



M2 (MHS Management Analysis & Reporting Tool)

- Powerful ad hoc query tool for detailed trend analysis such as patient and provider profiling
- Typical users: Data analysts skilled in Business Objects software



DHSS Data Quality Requirements



- Capture and catalog data files
- Assess and monitor data completeness
- Perform data quality feed node assessments
- Develop data quality software that:
 - Performs automatic data quality checks
 - Implements data quality assessments
 - Provides metrics and manages perspective of the files' data quality

DHSS Data Quality Metrics



- Integrity: is it secure?
- Relevancy: is it appropriate?
 - Reliability: is it rationally correlated?
 - Validity: is it sound?
- Consistency: is it free from contradiction?
 - Uniqueness: is it free from duplication?
- Timeliness: is it available when needed?
- Completeness: is it whole?
- Accuracy: is it free from error?

Data Quality Tools



- Real-time key data quality/completeness DB2 database for:
 - ✓ SIDR SADR HL7 PDTS Appointment Ancillary
- Database updated daily and scripted to provide “event-driven” alerts via e-mail for critical data quality areas
- DMIS IDs “real time” and “snapshot” views of key data completeness measures
- Web and front-end access for standard reports
- Multilayer data comparisons from raw to processed data for procedure-based

Data Tracker



- Essentially a “Mini MDR/M2” where data are processed in real time
- Data Tracker tools and reports

SIDR and SADR, HL7, Appointment, Ancillary, TED Inst/Non-Inst primary reports provide:

- File based accounting (e.g. Gap reports)
- Treatment based accounting (e.g. reports based on care date)
- Timeliness reporting (e.g. lag from care rendered date to ingest)
- Other statistical reports including benchmarking against WWR
- Statistical Process Control Alerting for SADR anomalies

Other Data Tracker tools and reports

- Monthly “Hutchinson-like” report (SIDR and SADR vs WWR Benchmarking)
- Ad Hoc Queries to the Data Tracker
- GCPR & PDTs Gap Reports – Receipt Reports – Pull Reports

Current Data Tracker reports on the DHSS (EIDS) Web site

- Daily SADR by HOST DMIS (The *“What Was Received Yesterday” Report*)
- Daily SADR by Treatment ID – 90 Day (The daily *“90 Day Roller” Report*)
13
- Monthly SIDR by Treatment DMIS

DHSS (EIDS) Web Portal Resource

The screenshot shows the 'EIDS - Microsoft Internet Explorer' window. The title bar reads 'EIDS - Microsoft Internet Explorer'. The address bar shows the URL 'https://eids.ha.osd.mil/'. The page header includes the 'EXECUTIVE INFORMATION AND DECISION SUPPORT' logo and the date '30 August, 2006'. The main menu bar has links for File, Edit, View, Favorites, Tools, Help, and various icons. The top navigation bar includes Home, Register, Login, About, Help Desk, Products, Related Sites, Privacy Policy, Feedback, Site Map, and Welcome. A sidebar on the left titled 'Product Access' lists various datasets like PEPR, Customer Satisfaction Survey (CSS), DEERS, EAS IV, HCPR, HCSR, and MCSC. Another sidebar titled 'EI/DS Captured Data' lists records such as SADR, PITE, Eligible Beneficiaries, Equipment Assignment System, Health Care Provider Record, Health Care Service Record, Institutional Claims, Health Care Service Record (HCSC), Professional Claims, Health Level 7 (HL-7), Non Ambulatory Statements (NAS), Pharmacy Data Transaction Service (PDT), Standard Ambulatory Data Record (SADR), Standard Inpatient Data Record (SIDR), TRICARE Encounter Data (TED) Claims, TRICARE Enrollment File, and Worldwide Workload Report. A large text box in the center-right contains the text: 'Location of data quality reports in DHSS EIDS Web portal.' A brown arrow points from the left side towards this text box. At the bottom of the page, there is a note about the site's last update and a warning about the nature of the system.

This site was last updated on Wednesday, August 30, 2006.
WARNING: This is a Department of Defense (DoD) Computer System.
POC: webmaster@eids.ha.osd.mil

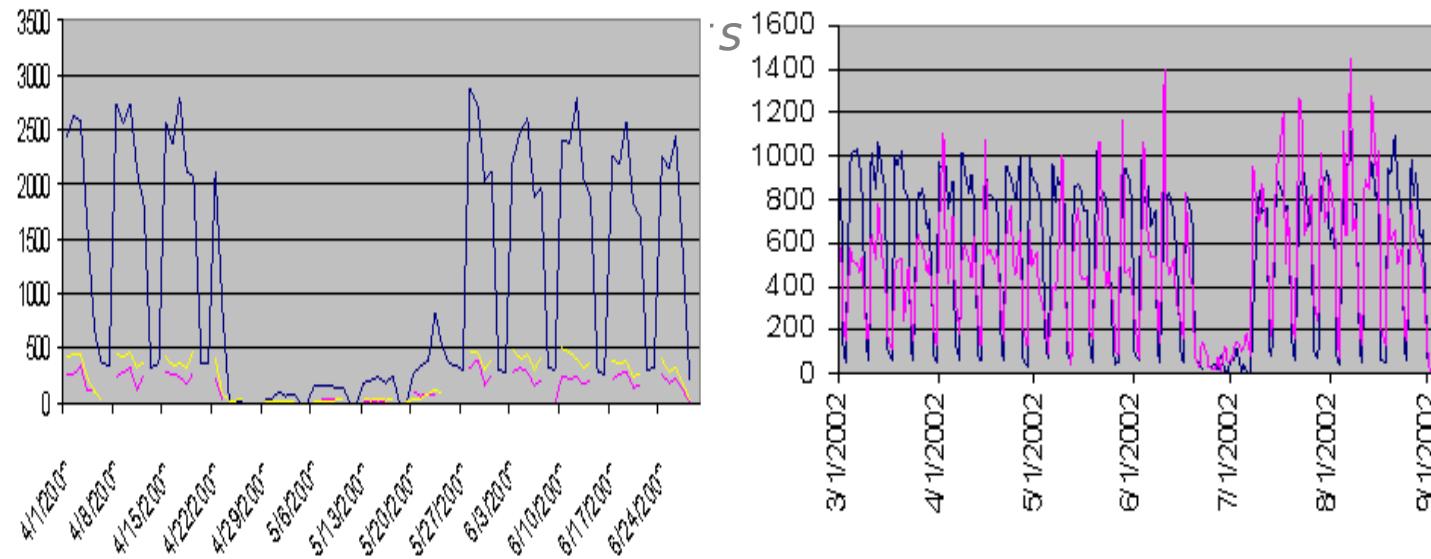
Location of data quality reports in DHSS EIDS Web portal.

Data Quality Assurance



Start with Run Charts

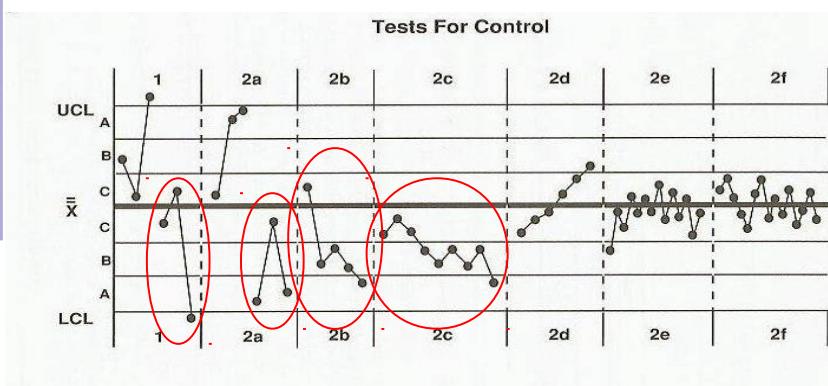
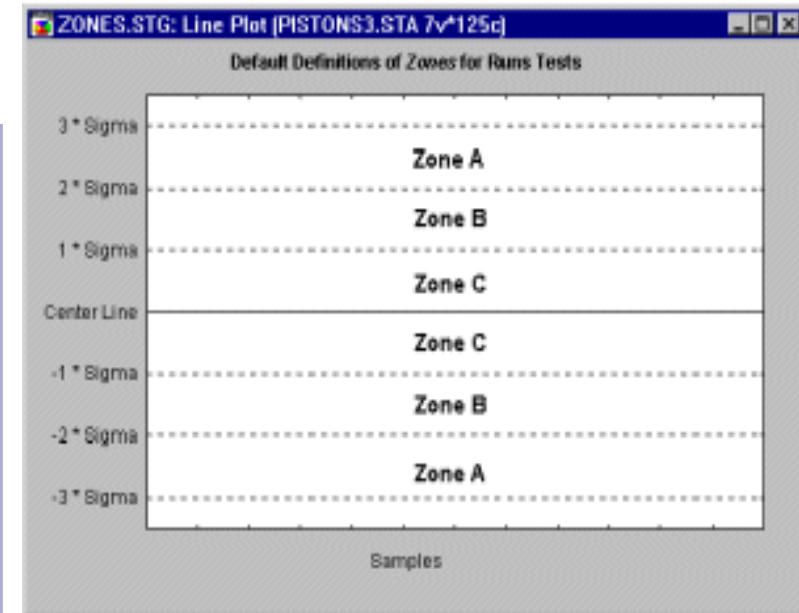
Facilities showing gaps in daily outpatient encounter data receipt. Investigation and data recovery actions required. *Data set has no correlation with other source*



The Future: Data Completeness Determination

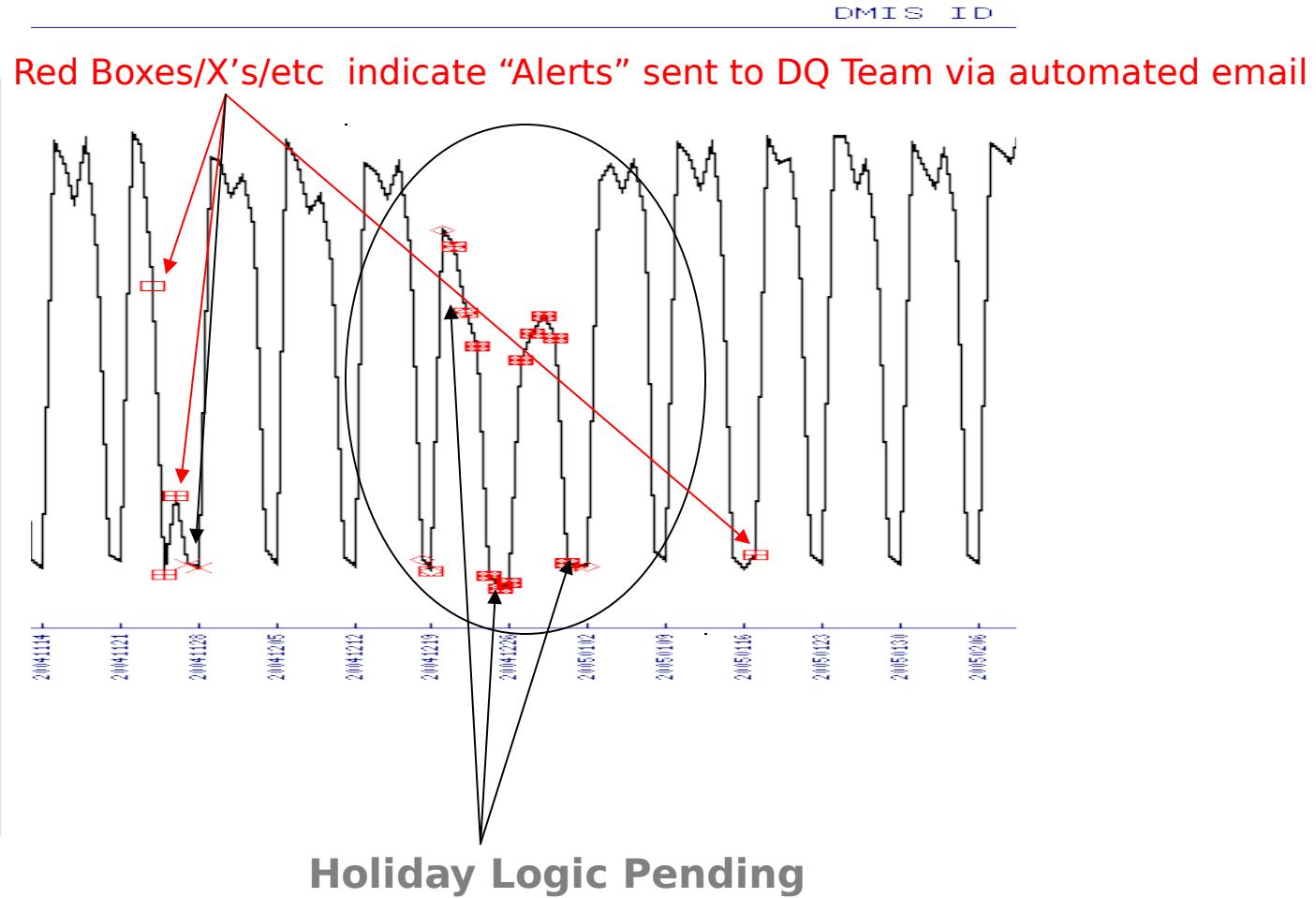
“Completeness” as a Process Control Problem

- Amenable to Statistical\Process Control
- Examine for Special Cause Variation
- Signals when a problem has occurred
- Detects variation
- Allows “Process Characterization”
- Reduces inspection need



The Future: Compare Each Day To Itself

Project previous data to today then compare this projection with newly arrived data.



The Future: Identifying Data Completeness Problems

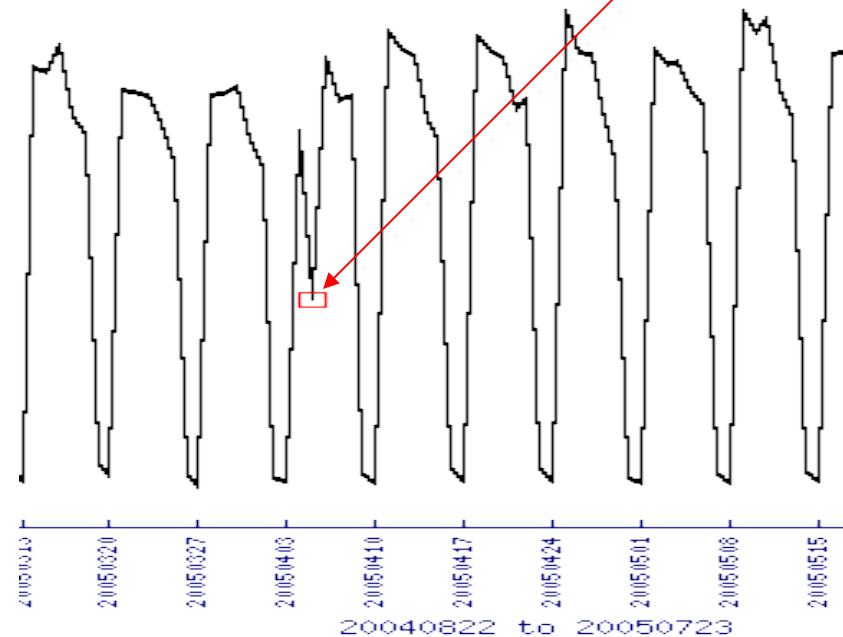


Red boxes/Xs/etc. indicate automatic e-mail “Alerts” to the data quality team.

Alerting and Notification Issue

How do you identify and present “possible” problems when:

- the “problem” is transient,
- it is one data point in a series,
- it is from one of a vast number of daily input data sources?

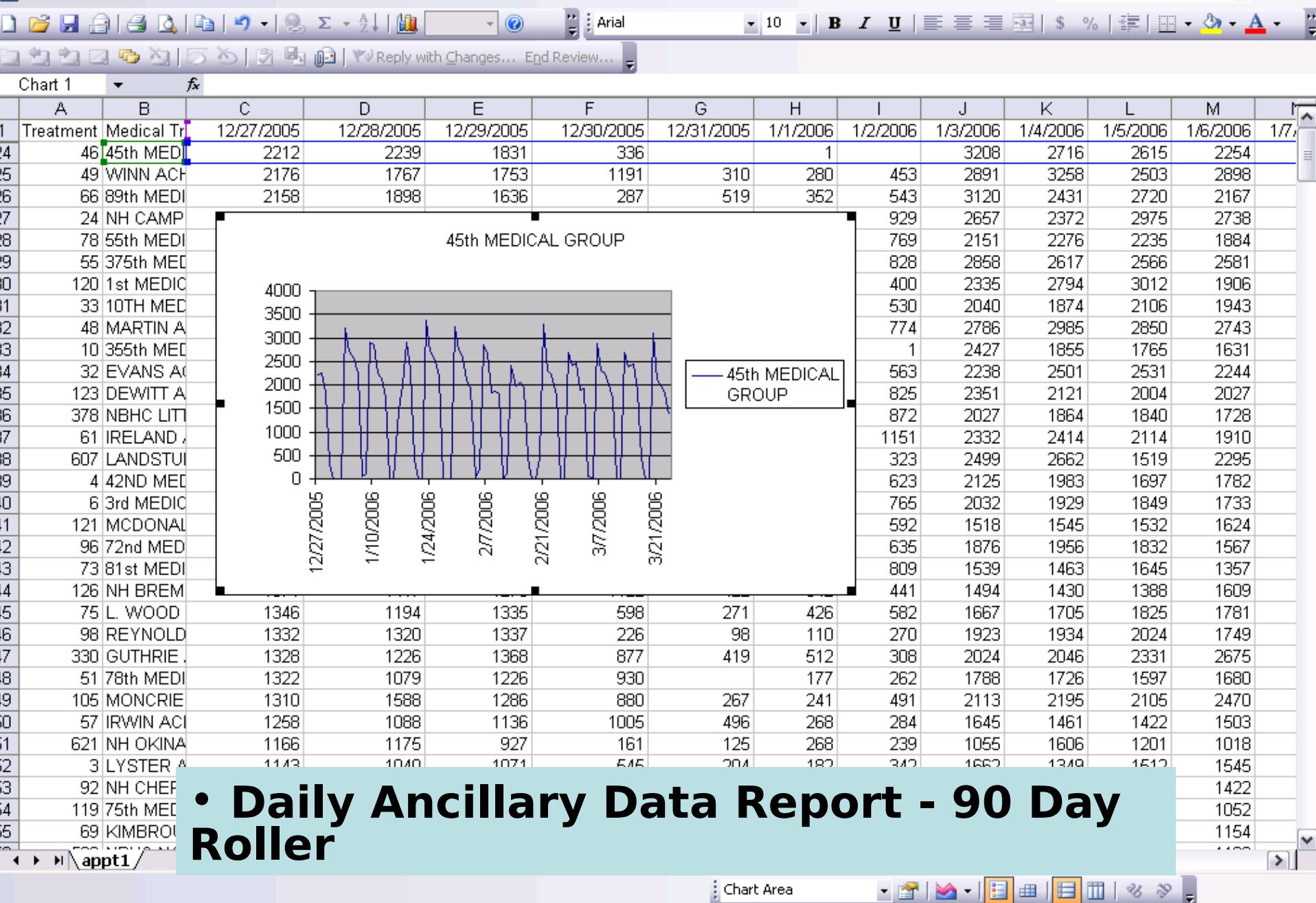


Essentially a projection of previous data forward in time to today then a comparison of this projection with the newly arrived data.

Data Tracker Report Series including:

- SADR vs Appointment Tracking (a real-time "Hutchinson" Report)
- SADR vs Appointment Delta Alerting →

	B	C	F	G	K	AA Post Processed Appointment Problem Indicator	AQ	BG	BX	B
1	DMISID	FACILITY	MONTH		SADR-includes appt inferred		SADR-does not include appt inferred	WWR		
2					A060109	H060109	S060109	W060112		
133	0015	9th MEDICAL GROUP BEALE AFB	Oct-04		3,722	3,624	3,720	3,715		
134	0015	9th MEDICAL GROUP BEALE AFB	Nov-04		3,664	3,586	3,663	3,659		
135	0015	9th MEDICAL GROUP BEALE AFB	Dec-04		3,579	3,495	3,574	3,575		
136	0015	9th MEDICAL GROUP BEALE AFB	Jan-05		4,007	3,902	4,006	3,994		
137	0015	9th MEDICAL GROUP BEALE AFB	Feb-05		3,785	3,686	3,782	3,773		
138	0015	9th MEDICAL GROUP BEALE AFB	Mar-05		4,886	4,743	4,883	4,846		
139	0015	9th MEDICAL GROUP BEALE AFB	Apr-05		4,136	689	4,136	4,123		
140	0015	9th MEDICAL GROUP BEALE AFB	May-05		4,000	3,926	4,000	3,986		
141	0015	9th MEDICAL GROUP BEALE AFB	Jun-05		4,539	4,446	4,539	4,525		
142	0015	9th MEDICAL GROUP BEALE AFB	Jul-05		3,600	2,685	3,598	3,310		
143	0015	9th MEDICAL GROUP BEALE AFB	Aug-05		4,681	4,216	4,672	4,292		
144	0015	9th MEDICAL GROUP BEALE AFB	Sep-05		4,173	3,551	4,163	3,571		
145	015 Total				48,772	42,549	48,736	47,369		
152	0101	20th MEDICAL GROUP SHAW AFB	Oct-04		7,815	6,368	6,050	6,369		
153	0101	20th MEDICAL GROUP SHAW AFB	Nov-04		7,182	5,740	5,278	5,748		
154	0101	20th MEDICAL GROUP SHAW AFB	Dec-04		6,808	5,780	5,416	5,792		
155	0101	20th MEDICAL GROUP SHAW AFB	Jan-05		7,523	6,495	5,863	6,488		
156	0101	20th MEDICAL GROUP SHAW AFB	Feb-05		7,371	5,853	5,050	5,860		
157	0101	20th MEDICAL GROUP SHAW AFB	Mar-05		8,905	7,347	6,279	7,354		
158	0101	20th MEDICAL GROUP SHAW AFB	Apr-05		8,158	6,938	5,775	6,953		
159	0101	20th MEDICAL GROUP SHAW AFB	May-05		7,453	6,121	5,482	5,965		
160	0101	20th MEDICAL GROUP SHAW AFB	Jun-05		7,767	6,249	5,786	6,231		
161	0101	20th MEDICAL GROUP SHAW AFB	Jul-05		6,319	3,415	4,590	3,405		
162	0101	20th MEDICAL GROUP SHAW AFB	Aug-05		8,801	6,085	8,440	6,073		
163	0101	20th MEDICAL GROUP SHAW AFB	Sep-05		7,850	2	7,850	5,687		
164	101 Total				91,952	66,393	71,859	71,925		



• Daily Ancillary Data Report - 90 Day Roller

EI/DS Tracking Reports

Select Report:

PDTS Gap
SADR Sites
SADR Size Discriminator
SADR Summary
SADR Tracking
SADR Tx DMIS ID Gap
SADR Tx DMIS ID Score
SADR Tx DMIS ID Tracking
SADR Visit Discriminator
SDR
SDR Gap
SDR Army Gap
SDR Tracking
SDR Tx DMIS ID Gap
SDR Tx Summary
SDR Tx DMIS ID Tracking
HL7
HL7 Duplicate Submissions
HL7 Gap
HL7 Retransmission
HL7 Sites
HL7 Tracking
PDTS
PDTS Gap
PDTS Rx Gap
PDTS Rx Tracking
PDTS Tracking
GCP
GCP Gap
GCP Sites
GCP Tracking

WBAM0108	09/30/2002	09/30/2002 - 04:34:35	56	0108	WILLIAM BEAUMONT AMC
WOOD0075	09/29/2002	09/30/2002 - 01:47:21	21	0075	L. WOOD ACH
WOOD1511	09/29/2002	09/30/2002 - 01:47:39	163	1511	RICHARD G. WILSON CTMC
WOOD1519	09/29/2002	09/30/2002 - 01:47:53	1	1519	USA OCCUP HLTH CLIN-GOODFELLOW

Files received with errors

/sourcedata/ads/sadr/ADGEIDSSA093002.BETH6201.d020930t015312 KGADS v2.3 NED		
Content errors	2	Total Records Failed
	2	Non-printing characters in data
/sourcedata/ads/sadr/ADGEIDSSA100102.LAND0606.d020930t184731 KGADS v2.3 NED		
Content errors	2	Total Records Failed
	2	Non-printing characters in data
/sourcedata/ads/sadr/ADGEIDSSA100102.LAND0805.d020930t184849 KGADS v2.3 NED		
Content errors	1	Total Records Failed
	1	Non-printing characters in data
/sourcedata/ads/sadr/ADGEIDSSA093002.FOXA0001.d020930t014717 KGADS v2.3 NED		
Content errors	9	Total Records Failed
	9	Non-printing characters in data
/sourcedata/ads/sadr/ADGEIDSSA093002.LEAV7297.d020930t224722 KGADS v2.3 NED		
Content errors	2	Total Records Failed
	2	Non-printing characters in data
/sourcedata/ads/sadr/ADGEIDSSA100102.KELL0086.d020930t230420 KGADS v2.3 NED		
Missing footer	1	Total Records Failed
	1	Non-printing characters in data

Number of consecutive days since last SADR file received

Site ID	ADS Type	Medical Treatment Facility	Days Missing	Host
CAF0085	KGADS v2.3 NED	27th MEDICAL GROUP	14	edwn35_sw
KELL0311	KGADS v2.3 NED	NATICK AHC	44	edwn35_sw
KELL8015	KGADS v2.3 NED	KELLER ACH TSC-PCM	73	edwn35_sw
LAND1449	KGADS v2.3 NED	249th COMBAT SUPPORT HOSPITAL (TOE)	26	edwn37_sw
LEAV1833	KGADS v2.3 NED	USADC SMITH	47	edwn35_sw
LEAV1835	KGADS v2.3 NED	USADC-DISCIPLINY BK3 #3 FT LEAVENWORTH	47	edwn35_sw
LUKE0009	KGADS v2.3 NED	56th MEDICAL GROUP	7	edwn35_sw
MAFB1748	KGADS v2.3 NED	341 DS/SGD	42	edwn35_sw
POLK1620	KGADS v2.3 NED	TMC-2-FT. POLK	80	edwn37_sw
POLK1621	KGADS v2.3 NED	TMC-3-FT. POLK	80	edwn37_sw
POLK1622	KGADS v2.3 NED	TMC-4-FT. POLK	80	edwn37_sw
RAFB0051	v2.1 NED	78th MEDICAL GROUP	4	edwn35_sw
RUCK0003	v2.1 NED	LYSTER ACH	27	edwn37_sw
TRIP0287	KGADS v2.3 NED	15th MEDICAL GROUP	5	edwn35_sw

Web site with pull down listing of Standard Data Quality and Data Completeness Reports

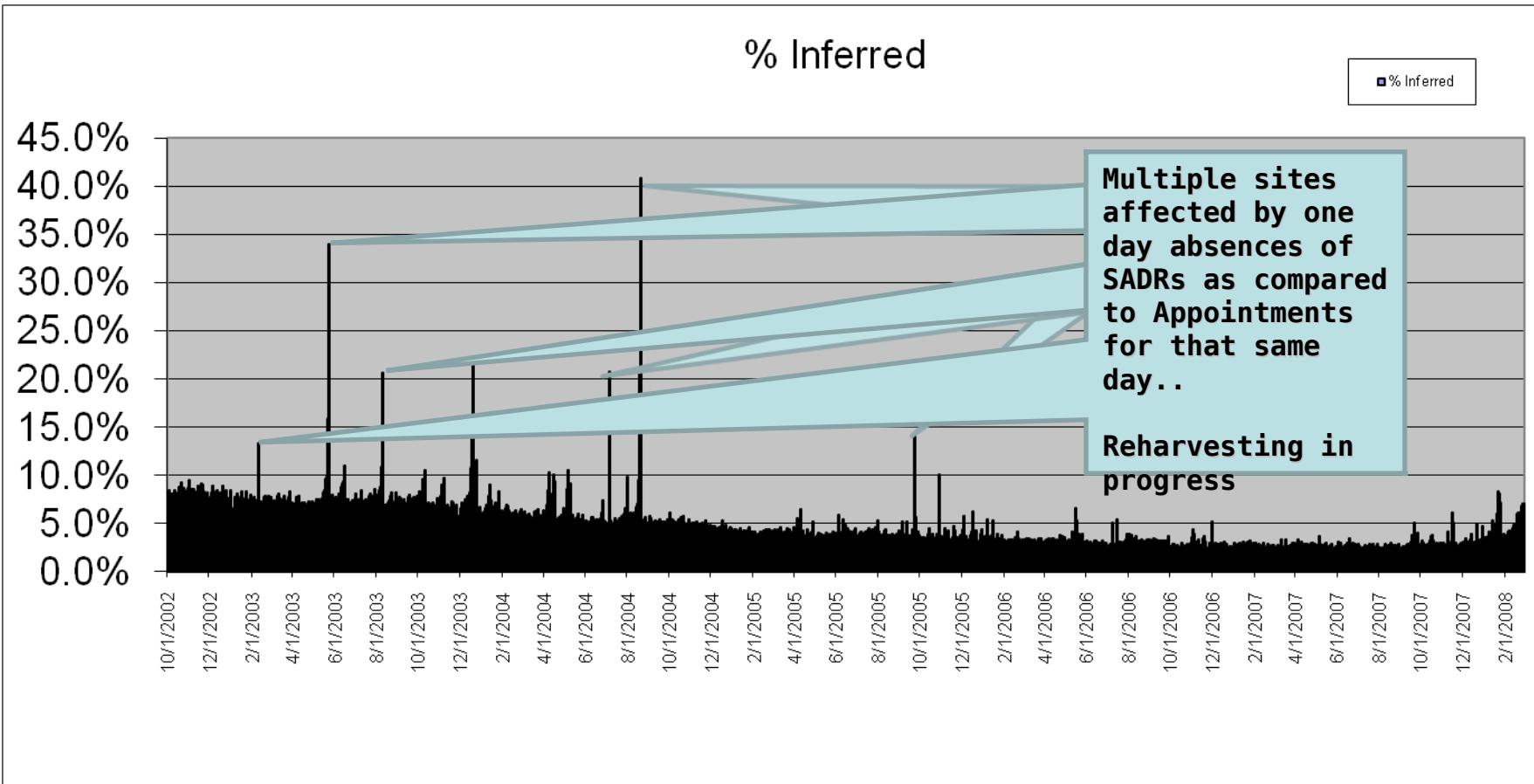
		US Army Sites		C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	
1	2	Site ID	Medical Treatment Facility	5/31/2002	6/1/2002	6/2/2002	6/3/2002	6/4/2002	6/5/2002	6/6/2002	6/7/2002	6/8/2002	6/9/2002	6/10/2002	6/11/2002	6/12/2002	6/13/2002	6/14/2002	6/15/2002	6/16/2002	6/17/2002	6/18/2002	6/19/2002	6/20/2002	6/21/2002	6/22/2002	6/23/2002	6/24/2002	
3	0001	FOX ARMY HEALTH CENTER		7	5	4	8	9	8	8	4	4	8	8	9	9	5	4	7	7	8	7	7	4	4	9			
4	0002	NOBLE AHC		12	12	12	12	12	12	11	12	12	12	12	11	12	12	12	12	13	12	12	12	12	12	13			
5	0003	LYSTER ACH		12	9	10	10	9	11	11	11	10	9	10	10	10	11	11	10	9	11	11	11	10	10	8	11		
6	0005	BASSETT ACH		13	12	11	12	11	12	12	12	12	12	12	12	12	12	11	12	12	12	11	12	12	12	11	12		
7	0008	RWBBLISS ARMY HEALTH CENTER		8	5	6	9	8	9	10	9	5	6	8	8	9	10	9	6	4	8	9	10	9	8	3	5	8	
8	0032	EVANS ACH		12	12	12	13	12	13	12	12	12	13	13	13	12	13	13	12	13	12	13	13	12	13	13	12	13	
9	0037	WALTER REED ARMY MEDICAL CENTER		8	6	4	8	8	7	7	8	5	5	9	8	8	7	7	5	5	8	8	6	7	8	5	5	8	
10	0047	EISENHOWER AMC		13	12	12	12	13	12	13	13	12	13	13	13	16	12	12	12	12	13	13	13	14	12	12			
11	0048	MARTIN ACH		13	12	12	12	13	13	13	13	12	13	13	12	13	12	12	13	12	13	13	13	12	13	13	12	13	
12	0049	WINN ACH																											
13	0052	TRIPLEX AMC		13	13	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
14	0057	IRWIN ACH		11	12	12	12	12	12	11	12	11	12	11	12	12	12	12	12	11	12	11	12	12	11	11	12	11	
15	0058	MUNSON ARMY HEALTH CENTER		10	9	8	10	9	9	10	9	7	8	10	10	10	12	10	6	7	10	10	9	10	10	7	9	11	
16	0060	BLANCHFIELD ACH		12	12	13	13	13	13	13	12	13	12	13	13	13	13	13	12	13	13	12	12	13	13	13	13	13	
17	0061	IRELAND ACH		11	12	13	12	12	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12	
18	0064	BAYNE-JONES ACH		11	12	12	12	12	12	13	12	12	12	12	13	12	12	12	12	12	12	12	12	12	12	12	12	12	
19	0075	L. WOOD ACH		12	12	12	12	12	12	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
20	0086	KELLER ACH		11	11	11	11	11	11	12	11	10	10	10	12	12	12	11	10	9	10	11	10	9	12	10	8	10	
21	0089	WOMACK AMC		13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	9	13	13	13	13	13	13	13	13	13	
22	0098	REYNOLDS ACH		12	13	12	13	13	12	12	12	12	12	12	12	13	12	12	12	12	12	12	12	12	11	12	13	13	
23	0108	WILLIAM BEAUMONT AMC		12	13	13	13	13	13	13	12	13	12	13	13	13	13	13	12	13	13	12	13	13	12	12	13	13	
24	0110	DARNALL ACH		13	13	13	13	13	13	13	13	13	10	12	13	13	13	13	13	13	13	13	13	12	13	13	13	13	
25	0125	MADIGAN AMC		13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
26	0131	WEED ACH		7	5	11	11	11	11	12	11	12	10	11	11	11	11	12	11	11	11	12	12	11	10	12	11	11	
27	0330	GUTHRIE AHC		9	11	10	11	10	10	11	11	10	9	10	10	11	11	10	11	10	10	11	12	12	11	10	10	9	
28	0607	LANDSTUHL REGIONAL MEDCEN		13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	
29	0612	121st GENERAL HOSPITAL		12	12	12	12	13	13	12	14	12	11	12	12	12	12	12	12	11	12	13	12	12	12	11	13	13	
30																													
31		US Navy Sites																											
32	0024	NH CAMP PENDLETON		12	13	13	13	13	12	13	13	13	13	13	13	13	13	13	12	13	13	13	13	13	13	13	13	13	
33	0028	NH LEMOORE		11	12	12	12	12	12	11	12	11	12	12	11	11	12	11	12	11	12	12	12	11	11	12			
34	0029	NMC SAN DIEGO		13	10	12	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
35	0035	NACC GROTON		11	11	11	10	11	11	11	10	10	9	11	12	11	11	10	10	10	9	9	10	10	9	9	10		
36	0038	NH PENSACOLA		12	13	12	13	13	12	13	13	12	12	12	13	13	13	12	13	12	13	12	13	13	12	12	13	13	
37	0039	NH JACKSONVILLE		13	13	13	13	13	13	12	13	12	13	12	13	12	13	12	13	13	12	13	13	13	13	8	10	13	
38	0056	NH GREAT LAKES		13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	13	12	13	13	
39	0067	NNMC BETHESDA		7	7	8	9	8	9	8	8	6	7	8	9	9	9	7	7	8	9	7	8	8	7	5	6	9	
40	0091	NH CAMP LEJEUNE		13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	

The HL7 Weekly Tracker - Sorted by Service. Posted on the EIDS Web site and updated weekly from the Data Tracker database.

Data Quality Tools – “Delta Detectors”

DMIS	Facility Name	FY	FM	Month	CAPER	SADR	CAPER visits / SADR
0208	BMC MCB CAMP PENDLETON	2008	05	Feb-08	2,291	2,290	100.04%
0208	BMC MCB CAMP PENDLETON	2008	06	Mar-08	2,554	2,316	110.28%
0297	NACC NEW ORLEANS	2003	01	Oct-02	.	2,140	0.00%
0297	NACC NEW ORLEANS	2003	02	Nov-02	.	1,999	0.00%
0297	NACC NEW ORLEANS	2003	03	Dec-02	.	1,978	0.00%
0297	NACC NEW ORLEANS	2003	04	Jan-03	.	2,281	0.00%
0297	NACC NEW ORLEANS	2003	05	Feb-03	.	2,114	0.00%
0297	NACC NEW ORLEANS	2003	06	Mar-03	.	2,134	0.00%
0297	NACC NEW ORLEANS	2003	07	Apr-03	.	2,300	0.00%
0297	NACC NEW ORLEANS	2003	08	May-03	.	2,271	0.00%
0297	NACC NEW ORLEANS	2003	09	Jun-03	.	2,192	0.00%
0297	NACC NEW ORLEANS	2003	10	Jul-03	.	1,964	0.00%
0297	NACC NEW ORLEANS	2003	11	Aug-03	.	1,704	0.00%
0297	NACC NEW ORLEANS	2003	12	Sep-03	.	1,715	0.00%
0297	NACC NEW ORLEANS	2004	01	Oct-03	.	1,621	0.00%
0297	NACC NEW ORLEANS	2004	02	Nov-03	.	1,106	0.00%
0297	NACC NEW ORLEANS	2004	03	Dec-03	.	1,658	0.00%
0297	NACC NEW ORLEANS	2004	04	Jan-04	.	1,497	0.00%
0297	NACC NEW ORLEANS	2004	05	Feb-04	.	1,315	0.00%
0297	NACC NEW ORLEANS	2004	06	Mar-04	.	1,417	0.00%
0297	NACC NEW ORLEANS	2004	07	Apr-04	23	1,329	1.73%
0297	NACC NEW ORLEANS	2004	08	May-04	1,095	1,099	99.64%
0297	NACC NEW ORLEANS	2004	09	Jun-04	1,184	1,184	100.00%
0297	NACC NEW ORLEANS	2004	10	Jul-04	1,116	1,116	100.00%
0297	NACC NEW ORLEANS	2004	11	Aug-04	1,116	1,089	102.48%
0297	NACC NEW ORLEANS	2004	12	Sep-04	860	860	100.00%
0297	NACC NEW ORLEANS	2005	01	Oct-04	1,206	1,206	100.00%
0297	NACC NEW ORLEANS	2005	02	Nov-04	1,157	1,158	99.91%
0297	NACC NEW ORLEANS	2005	03	Dec-04	981	986	99.49%
0297	NACC NEW ORLEANS	2005	04	Jan-05	1,156	1,158	99.83%
0297	NACC NEW ORLEANS	2005	05	Feb-05	981	983	99.80%
0297	NACC NEW ORLEANS	2005	06	Mar-05	1,113	1,113	100.00%

Data Quality Tools – “Delta Detectors”



Data Quality Tools – “Delta Detectors”

Tmt Par	Tmt Parent	DMIS ID	Name	Week of Year:																					
				Day of week	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	
0029	NMC SAN DIEGO			3	601	198	212	70	250	205	230	207	186	182	189	188	1	3	198	381	205	288	209	282	
0029	NMC SAN DIEGO			4	288	139	332	135	207	225	175	150	250	206	212	184	101	164	221	219	221	256	238	191	
0029	NMC SAN DIEGO			5	210	168	150	169	137	191	154		183	134	139	125	110	180	212	178	195	160	223	154	
0029	NMC SAN DIEGO			6	186	94	106	94	142	117	154	128	122	136	164	148	86	148	138	148	182	166	192	138	
0029	NMC SAN DIEGO			7	25	4	6	13	43	6	4	3	3	19	74	8	8	3	9	6	6	7	4	9	
0030	NH TWENTYNINE PALMS			1	4																			1	
0030	NH TWENTYNINE PALMS			2	88		31	22	18	16			30	24	33	27	13			28	34	11	20	34	
0030	NH TWENTYNINE PALMS			3	96	22	24	13	16	14	1	29	27	32	26	3			20	38	23	12	29	35	
0030	NH TWENTYNINE PALMS			4	28	28	28	23	22	29	24	48	27	40	39	20	20	20	23	25	19	12	17	22	
0030	NH TWENTYNINE PALMS			5	37	31	27	25	23	28	32		27	28	6	22	2	21	26	38	26	11	17	61	
0030	NH TWENTYNINE PALMS			6	19	27	22	13	21	15	8		43	21	6	14	9	12	15	18	26	15	13	13	
0030	NH TWENTYNINE PALMS			7	1			1									2	1						2	
0032	EVANS ACH-FT. CARSON			1	1							1								1				2	
0032	EVANS ACH-FT. CARSON			2	48	1	25	22	20	27	2	27	26	31	33	41	2		54	77		34	30	34	
0032	EVANS ACH-FT. CARSON			3	60	21	27	19	30	26	23	11	23	28	25	34			42	48	32	44	64	55	
0032	EVANS ACH-FT. CARSON			4	25	23	21	27	24	37	19	17	28	20	34	23	48	43	39	36	32	30	54	41	
0032	EVANS ACH-FT. CARSON			5	20	21	19	7	22	29	18		22	20	69	20	37	47	42	42	31	39	56	37	
0032	EVANS ACH-FT. CARSON			6	22	19	19	23	16	13	14		15	16	23	10	46	36	38	30	28	41	33	24	
0032	EVANS ACH-FT. CARSON			7	1			1				1	1	1	1	1	1	1	1	1	1			1	
0033	10TH MED GROUP-USAF ACADEMY			1																				2	
0033	10TH MED GROUP-USAF ACADEMY			2	23		10	13	9	8		11	10	10	10	5			13	11	1	9	10	5	
0033	10TH MED GROUP-USAF ACADEMY			3	19	6	5	11	8	10	7	6	11	8	3	3		7	12	7	9	10	12		
0033	10TH MED GROUP-USAF ACADEMY			4	11	6	9	9	9	9	12	7	6	10	10	9	4	8	8	6	5	10	8	7	
0033	10TH MED GROUP-USAF ACADEMY			5	7	6	7	8	6	7	12		11	2	1	12	5	11	7	7	4	10	3	10	
0033	10TH MED GROUP-USAF ACADEMY			6	2	4	8	2	6	3	4		9	7	5	8	4	11	6	4		10	12	6	
0033	10TH MED GROUP-USAF ACADEMY			7																				1	
0036	436TH MED GRP-DOVER			2	1														1					3	
0036	436TH MED GRP-DOVER			3	38																			1	
0036	436TH MED GRP-DOVER			4			1										5							1	
0036	436TH MED GRP-DOVER			5			2											2						1	
0036	436TH MED GRP-DOVER			6			1	1	1															1	
0036	436TH MED GRP-DOVER			7					8																3
0037	WALTER REED AMC-WASHINGTON			1	3	1		7	4	3	11		1	1	1	2	6	4		2	11	4			
0037	WALTER REED AMC-WASHINGTON			2	288	2	218	121	160	119	4	184	138	160	122	128	2		146	144	1	154	95	145	
0037	WALTER REED AMC-WASHINGTON			3	298	142	311	190	136	109	148	132	148	182	178	159	2	2	136	196	128	163	148	124	
0037	WALTER REED AMC-WASHINGTON			4	144	113	302	170	138	155	155	164	147	108	124	120	62	120	134	162	150	128	100	107	
0037	WALTER REED AMC-WASHINGTON			5	109	120	212	129	126	162	126	1	150	58	137	102	44	87	92	136	107	110	104	86	
0037	WALTER REED AMC-WASHINGTON			6	82	119	213	119	104	132	113	2	124	132	82	60	62	83	104	90	108	88	117	87	
0037	WALTER REED AMC-WASHINGTON			7	3	2	7	2	10	3	3	6	1	6	10	1		2	4	11	5	2	25		
0038	NH PENSACOLA			1																				1	
0038	NH PENSACOLA			2	40		5	11	7	6	1	31	16	148	16	11			24	27		23	15	9	
0038	NH PENSACOLA			3	26	5	15	7	11	4	0	16	78	21	14	1		20	43	28	21	22	15		

These numbers represent the difference between kept appointments and SADRs received by DHSS

Data Quality Tools – “Delta Detectors”

DMISID	FACILITY	FY	FM	MONTH	Appr Inferred		Raw SADR	RAW SADRs - % Less than Inferred	Ext Consistency raw SADR as % of Same Month WWR	WWR
					AApr08	SApr08				
0037	WALTER REED ARMY MEDICAL	2007	02	Nov-06	72,681	70,099		96%	109.74%	63,880
0037	WALTER REED ARMY MEDICAL	2007	03	Dec-06	62,404	60,369		97%	110.57%	54,600
0037	WALTER REED ARMY MEDICAL	2007	04	Jan-07	73,535	71,146		97%	110.88%	64,163
0037	WALTER REED ARMY MEDICAL	2007	05	Feb-07	59,960	57,825		96%	109.53%	52,794
0037	WALTER REED ARMY MEDICAL	2007	06	Mar-07	72,419	69,961		97%	108.13%	64,700
0037	WALTER REED ARMY MEDICAL	2007	07	Apr-07	69,736	67,207		96%	111.18%	60,449
0037	WALTER REED ARMY MEDICAL	2007	08	May-07	73,889	71,046		96%	113.68%	62,496
0037	WALTER REED ARMY MEDICAL	2007	09	Jun-07	69,011	65,868		95%	114.19%	57,684
0037	WALTER REED ARMY MEDICAL	2007	10	Jul-07	64,747	62,396		96%	110.16%	56,640
0037	WALTER REED ARMY MEDICAL	2007	11	Aug-07	69,316	66,869		96%	117.63%	56,848
0037	WALTER REED ARMY MEDICAL	2007	12	Sep-07	62,279	58,674		94%	125.49%	46,756
0037	WALTER REED ARMY MEDICAL	2008	01	Oct-07	78,299	73,914		94%	123.55%	59,824
0037	WALTER REED ARMY MEDICAL	2008	02	Nov-07	69,506	66,624		96%	119.48%	55,761
0037	WALTER REED ARMY MEDICAL	2008	03	Dec-07	57,473	54,954		96%	118.20%	46,491
0037	WALTER REED ARMY MEDICAL	2008	04	Jan-08	75,470	62,533		83%	99.77%	62,679
0037	WALTER REED ARMY MEDICAL	2008	05	Feb-08	68,328	65,453		96%	117.01%	55,939
0037	WALTER REED ARMY MEDICAL	2008	06	Mar-08	62,227	62,227		100%	105.35%	59,066

Data Quality Tools – “Interface Monitoring”

Map of CHCS Sending Facilities to EIDS Operations Site ID and DMIS ID				Msg Receipts at EIDS - March 2008 - By Sending Application								
CHCS Sending Facility	EIDS Ops Site	ID	DMIS ID	Medical Treatment Facility	Service	IV	LAB AP	LAB CH	LAB MI	MED	RAD	RX
A1411	0110	0110	DARNALL AHC-FT HOOD	A	Y	Y	Y	Y	Y	Y	Y	Y
HP0125	0125	0125	MADIGAN AMC-FT. LEWIS	A	Y	Y	Y	Y	Y	Y	Y	Y
A1631	0131	0131	WEED AHC-FT. IRWIN	A	Y	Y	Y	Y	Y	Y	Y	Y
HP0330	0330	0330	GUTHRIE AHC-FT. DRUM	A	N	Y	Y	Y	Y	N	Y	Y
HP0607	0607	0607	LANDSTUHL REGIONAL MEDCEN	A	Y	Y	Y	Y	Y	Y	Y	Y
A0611	0612	0612	121st GEN HOSP-SEOUL	A	Y	Y	Y	Y	Y	Y	Y	Y
N68084	0024	0024	NH CAMP PENDLETON	N	Y	Y	Y	Y	Y	Y	Y	Y
N66095	0028	0028	NMC MOORE	N	Y	Y	Y	Y	Y	Y	Y	Y
N00253	0023	0023	NMC SAN DIEGO	N	Y	Y	Y	Y	Y	Y	Y	Y
HP0035	0035	0035	NACC SPOTON	N	Y	Y	Y	Y	N	Y	Y	Y
N00203	0038	0038	NH PENSACOLA	N	Missing 14-23 Mar	Missing 14-23 Mar	Missing 14-23 Mar	Missing 14-23 Mar	Missing 14-23 Mar	Missing 14-23 Mar	Missing 14-23 Mar	
N0032	0033	0033	NH JACKSONVILLE	N	Y	Y	Y	Y	Y	Y	Y	Y
N00211	0056	0056	NH GREATER LAKES	N	N	Y	Y	Y	Y	N	Y	Y
HP0031	0001	0001	NH CLAMPTON LINE	N	Y	Y	Y	Y	Y	Y	Y	Y
N68084	0103	0103	NH CHARLESTON	N	Y	Y	Y	Y	Y	Y	Y	Y
N00118	0118	0118	NH CORPUS CHRISTI	N	N	Y	Y	Y	Y	N	Y	Y
N00183	0124	0124	NMC PORTSMOUTH	N	Y	Y	Y	Y	Y	Y	Y	Y
HP0615	0515	0515	NH GUANTANAMO BAY	N	Y	Y	Y	Y	Y	Y	Y	Y
HP0616	0516	0516	NH ROOSEVELT ROADS-CEIBA	N	N	N	N	N	N	N	N	Y
N68096	0517	0517	NH NAPLES	N	Y	Y	Y	Y	Y	Y	Y	Y
HP0618	0518	0518	NH ROTA	N	Y	Y	Y	Y	Y	Y	Y	Y
N68096	0620	0620	NH GUAM-AGANA	N	Y	Y	Y	Y	Y	Y	Y	Y
N68470	0621	0621	NH OKINAWA	N	Y	Y	Y	Y	Y	Y	Y	Y
HP0622	0622	0622	NH YOKOSUKA	N	Y	Y	Y	Y	Y	Y	Y	Y
N68375	0623	0623	NH KEFLAVIK	N	N	N	N	N	N	N	N	Y
N39163	0624	0624	NH SIGONELLA	N	Y	Y	Y	Y	Y	Y	Y	Y
HP1170	1170	1170	BMC NSA BAHRAIN	N	N	Y	Y	Y	Y	N	Y	Y
F0155	0004	0004	42ND MEDICAL GROUP-MAXWELL	F	N	Y	Y	Y	Y	N	Y	Y
F0252	0006	0006	3rd MED GRP-ELMENDORF	F	Y	Y	Y	Y	Y	Y	Y	Y
F0452	0009	0009	56th MED GRP-LIKE	F	N	Y	Y	Y	Y	N	Y	Y
F0451	0010	0010	355th MED GRP-DAVIS MONTBANC	F	N	Y	Y	Y	Y	N	Y	Y
F0553	0013	0013	314th MED GRP-LITTLE ROCK	F	N	Y	Y	Y	Y	N	Y	Y
HP0014	0014	0014	60th MED GRP-TRAVIS	F	Y	Y	Y	Y	Y	Y	Y	Y
F0670	0018	0018	30th MED GRP-VANDEBERG	F	N	Y	Y	Y	Y	N	Y	Y
F0654	0019	0019	95th MED GRP-EDWARDS	F	N	Y	Y	Y	Y	N	Y	Y
F1051	0036	0036	436th MED GRP-DOWER	F	N	Y	Y	Y	Y	N	Y	Y
HP0042	0042	0042	98th MED GRP-EGLIN	F	Missing 1-28 Mar	Missing 1-28 Mar	Missing 1-28 Mar	Missing 1-28 Mar	Missing 1-28 Mar	Missing 1-28 Mar	Missing 1-28 Mar	
HP0043	0043	0043	325th MED GRP-TYNDALL	F	N	Y	Y	Y	Y	N	Y	Y
HP0045	0045	0045	6th MED GRP-MACDILL	F	Y	Y	Y	Y	Y	Y	Y	Y
F1256	0046	0046	45th MED GRP-PATRICK	F	N	Y	Y	Y	Y	N	Y	Y
F1355	0050	0050	347th MED GRP-MOODY	F	N	Missing 1-6 Mar	Missing 1-6 Mar	Missing 1-6 Mar	N	Missing 1-6 Mar	Missing 1-6 Mar	
F1356	0051	0051	78th MED GRP-ROBINS	F	N	Y	Y	Y	N	Y	Y	Y
F1651	0053	0053	368th MED GRP-MOUNTAIN HOME	F	Y	Y	Y	Y	Y	Y	Y	Y
HP0055	0055	0055	375th MED GRP-SCOTT	F	N	Y	Y	Y	Y	N	Y	Y
F2057	0059	0059	22nd MED GRP-MCCONNELL	F	N	Y	Y	Y	Y	N	Y	Y
HP0062	0062	0062	2nd MED GRP-BARKSDALE	F	N	Y	Y	Y	Y	N	Y	Y
F2853	0073	0073	81st MED GRP-KEESLER	F	Y	Y	Y	Y	Y	Y	Y	Y
F2851	0074	0074	14th MED GRP-COLUMBUS	F	N	Y	Y	Y	Y	N	Y	Y
F2954	0076	0076	509th MED GRP-WHITEMAN	F	N	Y	Y	Y	Y	N	Y	Y
F3051	0077	0077	341st MED GRP-MAJLSTROM	F	N	Missing 4 Mar only	Missing 4 Mar only	Missing 4 Mar only	N	Missing 4 Mar only	Missing 4 Mar only	
HP0078	0078	0078	55th MED GRP-OFFUTT	F	Y	Y	Y	Y	N	Y	Y	Y
F3251	0079	0079	99th MED GRP-O'CALLAGHAN HOSP	F	Y	Y	Y	Y	Y	Y	Y	Y
F3552	0083	0083	377th MED GRP-KIRTLAND	F	N	N	N	N	N	N	N	Y
HP0084	0084	0084	49th MED GRP-HOLLOMAN	F	N	Y	Y	Y	N	Y	Y	Y
F3554	0085	0085	27th MED GRP-CANNON	F	N	Y	Y	Y	N	Y	Y	Y
FJ456	0639	0639	35th MED GRP-MISAWA	F	Y	Y	Y	Y	Y	Y	Y	Y
F1T52	0808	0808	31st MED GRP-AVIANO	F	Y	Y	Y	Y	Y	Y	Y	Y
HP0130	aka	0130	USCG CLINIC KODIAK, AK	C	N	Y	Y	Y	N	N	N	Y
HP0416	cen	0416	MOBILE USCG CLINIC	C	N	Y	Y	Y	N	N	Y	Y
HP0428	eas	0428	CAPE MAY COAST GUARD CLINIC	C	N	Y	Y	Y	N	N	Y	Y
HP7043	hia	7043	HONOLULU COAST GUARD CLINIC	C	Test Site	Test Site	Test Site	Test Site	Test Site	Test Site	Test Site	
HP0067	ncac	0067	NNMC BETHESDA, MD	N	Y	Y	Y	Y	Y	Y	Y	
HP0418	pac	0418	ALAMEDA COAST GUARD CLINIC	C	N	N	Y	Y	N	N	Y	
HP7042	pra	7042	BORINQEN COAST GUARD CLINIC	C	N	N	Y	Y	N	N	Y	

Data Quality Processes

Problem Determination Process

“File Level” Gaps

- a. Automated Process – e.g. Nothing received as of date or
- b. SADR Example: Nothing in 3 days – Email Alert

- Note Files contain data from many encounter dates. *Files may be received daily, but these files may not correlate with CURRENT data)*

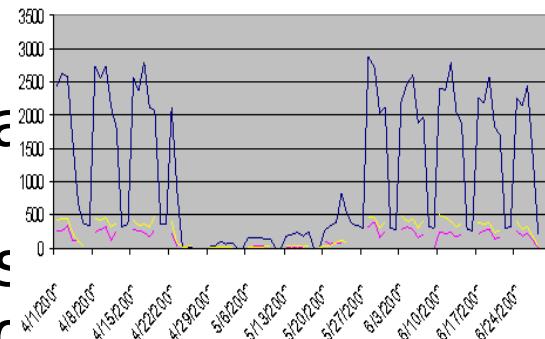
From: admtrak.edwn11_sw@iris.den.disa.mil [mailto:admtrak.edwn11_sw@iris.den.disa.mil]
Sent: Monday, July 30, 2007 11:08 AM
Subject: SADR GAPS

SADR Gaps on 07/29/2007 as of 07/30/2007

Site ID,	Medical Treatment Facility,	Days Missing,	Host,
KAFB0038,	NH PENSACOLA,	4,	edwn35_sw,
KAFB0073,	81st MEDICAL GROUP,	4,	edwn35_sw,
KAFB0316,	NBHC GULFPORT,	4,	edwn35_sw,
KAFB0436,	KGADS,NBHC NAS BELLE CHASE,	4,	edwn35_sw,
KAFB0654,	KGADS,NBHC PASCAGOULA,	4,	edwn35_sw,
KAFB1990,	KGADS,BMC NAVSUPPACT EBANK,	4,	edwn35_sw,

“Encounter Date” Analysis

- a. Monthly and ad hoc manual
- b. E.g. Run Charts
- c. NOTE: SPC Control Charts designed to provide an automatic means to perform this activity)



Notices of “Non Receipt”

CAPER Tracking from 11/08/2008 - 12/07/2008
as of 12/09/2008

		12/1/2008	12/1/2008	12/2/2008	12/2/2008	12/3/2008	12/3/2008	12/4/2008	12/4/2008	12/5/2008	12/5/2008	12/6/2008	12/6/2008	12/7/2008	12/7/2008
Site ID	Medical Treatment Facility	Files	Records												
VAFB0338	71st MEDICAL GROUP	1	134	1	325	1	193	1	182	1	351	1	1	1	1
CAMP0060	BLANCHFIELD ACH	1	3070	1	3939	1	4358	1	3645	1	3244	1	277	1	1004
CAMP1506	AVIATION MEDICINE CLINIC	1	22	1	147	1	66	1	62	1	21	1	1	1	1
CAMP7307	LA POINTE HEALTH CLINIC	1	269	1	622	1	507	1	482	1	565	1	1	1	1
DAFB0112	7th MEDICAL GROUP	1	353	1	554	1	516	1	477	1	596	1	25	1	23
FOXA0001	FOX ARMY HEALTH CENTER	1	445	1	728	1	644	1	439	1	1	1	13	1	1
KAFB0038	NH PENSACOLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MAFB0081	PATTERSON AHC	1	64	1	221	1	349	1	328	1	1	1	24	1	1
MAFB0322	BMC COLTS NECK EARLE	1	6	1	11	1	8	1	13	1	1	1	1	1	1
MAFB0325	PICATINNY ARSENAL AHC	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SIGO0624	NH SIGONELLA	1	125	1	376	1	159	1	257	1	258	1	25	1	1
SIGO0858	BMC NAVSUPPACT SOUDA BA	1	4	1	11	1	18	1	10	1	17	1	4	1	1
WAFB0129	90th MEDICAL GROUP	1	277	1	331	1	320	1	278	1	234	1	12	1	2
WOOD0075	L. WOOD ACH	1	2237	1	2214	1	2284	1	2003	1	2103	1	198	1	1
PENS0357		1	21	1	44	1	30	1	27	1	21	1	1	1	1

Example of a site
where notice provided
of lack of data (file)
receipt.

Data Quality Processes



Problem Resolution Process

IF “file level” OR “encounter date level” problem detected:

- Immediate MHS Help Desk Ticket
- Notification if problem is deemed, “significant and or long standing”
- Determination if “Blaster” message to analytical community is appropriate or required. Note that individual site “transient” halts in transmission occur regularly and are usually resolved quickly. These “transient” problems are not reported in real time as M2 utilizes a batch process and problems are often resolved between batch processing cycles.
- Coordination with “Service POCs” to determine if problem also exists in “Service” databases.
- Recovery of files via sharing between service databases and DHSS

Data Quality Processes



Common Problems – In Order of Occurrence

4 Broad Categories

- Provider/Coding Issues
 - “Slow Coding” for the data receipt perspective
 - Provider “left”
- Transmission/Send of Data
 - Sy_ETU Problems
 - Host Issues (e.g. Change Package induced problems)
- Network Routing Issues
- Ingest or Processing

Data Quality Tools



Partial List of Standard Reports from the EIDS Web Portal Data Tracker Database

- **HL7 tracking:** Displays a tabular view of file submission history for each HL7 site.
- **SADR gaps:** Displays a list of sites, by ADS version, that did not report data for at least a fixed number of days
- **SADR lags:** Displays the mean and standard deviation of the reporting lag for each site, by ADS version.
- **SADR scores:** Displays a SADR transmission completeness report. For each site, by ADS version, a completion percentage is listed. assumed.
- **SADR tracking:** A tabular view of file and record submission history for each site, by ADS version. Each column corresponds to a file date.
- **SADR treatment DMIS ID gaps:** Displays a list of treatment DMIS IDs that did not report data for at least a fixed number of days.
- **SADR treatment DMIS ID scores:** A SADR transmission completeness report. For each treatment DMIS ID, a completion percentage is listed.
- **SADR treatment DMIS ID tracking:** Displays a tabular view of record submission history for each treatment DMIS ID.
- **SADR treatment DMIS ID (by visit type) tracking:** Displays a tabular view of record submission history for each treatment DMIS ID. The displayed counts indicate the number of unique SADR data records, determined by appointment prefix and appointment identifier number.
- **SIDR gaps:** A list of reporting sites that did not report data for a fixed

Data Quality Tools (continued)



- **GCPR sites:** Displays a list of GCPR sites by Service, region, and DMIS ID, allowing the user to review the mapping of GCPR sites to DMIS IDs.
- **GCPR tracking:** Displays a tabular view of file submission history for each GCPR site. Each column corresponds to a date within the range specified.
- **HL7 gap:** Displays a list of sites that did not report data for at least a fixed number of days, as specified by the user query.
- **PDTS gap:** Displays a list if PDTS data has not been reported for at least a fixed number of days, as specified by the user query.
- **PDTS tracking:** Displays a tabular view of file submission history for PDTS. Each column corresponds to a file date within the range specified.
- **Ancillary Tracking:** Displays a tabular view of file and record submission history for each reporting DMIS ID. Each column corresponds to a file date within the selected range.
- **Ancillary Gap:** Displays a list of reporting DMIS IDs, that did not report data for at least a fixed number of days.
- **Ancillary treatment DMIS ID Tracking:** Displays a tabular view of record submission history for each ancillary performing DMIS ID. Each column corresponds to a service date within the range specified. The displayed counts indicate the number of unique ancillary data records, as determined by the accession number for laboratory, exam number for radiology, and prescription number for pharmacy.
- **Ancillary treatment DMIS ID Gap:** Displays a list of performing DMIS IDs that did not report data for at least a fixed number of days, as specified by days, up to and including the ending service date, as specified.
- **Appointment treatment DMIS ID Tracking:** Displays a tabular view of record submission history for each appointment treatment DMIS ID. Each column corresponds to an appointment date within the inclusive range specified by the beginning and ending appointment dates, as specified by the user query.

Data Quality Tools



```
graph LR; A[Data Quality Tools] --> B[Allow DHSS to]; B --> C

- Catalog data files
- Monitor data completeness
- Provide metrics to assess data quality/completeness of data received
- Design, develop and maintain data quality software

```

Allow DHSS to

- Catalog data files
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The Key To Data Quality Success



- Partnering with our users to maximize information sharing
- Questions?

Contact DHSS

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07 January, 2005

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Product Access
For Product access, please contact [EI/DS Access](#).

EI/DS Captured Data

- Customer Satisfaction Survey Data
- DEERS Point-in-Time Extract (PITE) - Eligible Beneficiaries
- Expense Assignment System IV (EAS IV)
- Health Care Provider Record (HCPR)
- Health Care Service Record (HCSR)
- Institutional Claims
- Health Care Service Record (HCSR)
- Professional Claims
- Health Level 7 (HL-7)
- Non-Availability Statements (NAS)
- Pharmacy Data Transaction Service (PDTS)
- Standard Ambulatory Data Record (SADR)
- Standard Inpatient Data Record (SIDR)
- TRICARE Encounter Data (TED) Claims
- TRICARE Enrollment File
- Worldwide Workload Report

EI/DS: Did you know...?

The MCFAS Beneficiary Population Forecasting Model is a powerful MHS application for analyzing and forecasting beneficiary demographics. Variations in age, gender, locality, and beneficiary entitlement status can be tracked and projected over an 8-year planning horizon.

Dates to Remember

- TRICARE Conference - 24 Jan 2005
- HIMSS Conference - 13 Feb 2005

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MHS Help Desk

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